Pandanaceæ.—This order, like all the rest of Lindley's Aral Alliance, abounds in raphides. Besides the plants noticed in the 'Annals' for May 1864, I have lately examined a leaf and the bark of *Pandanus odoratissimus* and the root and a leaf of *Freycinetia imbricata*. In the leaf of the former plant raphides swarm, and occur more or less plentifully in the mesophlœum, endophlœum, and alburnum; of the latter plant raphides are very abundant in the root, but less so in the leaf.

Thus, as far as these observations warrant the inference, *Pterisanthes* and *Leea* have the intimate structure of a *Vitis*, while the two species of *Rhaganus* (*Bersama* or *Natalia*) depart from that structure, but agree well together. *Acorus* and *Gymnostachys* are deficient in the raphidian character of their allies; and the Velloziæ differ in like manner from Hæmodoreæ, Conostyleæ, Pandaneæ, and Cyclantheæ.

Edenbridge, Oct. 14, 1865.

XXXVIII.—*Note on the Cretaceous Deposits of Australia.* By Frederick M'Coy, Professor of Natural Science in the University of Melbourne, and Director of the National Museum of Victoria.

Messrs. D. Carson and J. Sutherland, of Collins Street, Melbourne, recently placed in my hands, for our public Museum, a series of specimens which they collected on the western bank of the Flinders River, at the base of Walker's Table Mountain, nearly in the middle of the continent, in lat. 21° 13′ and long. 143° 25′. The examination of these enables me to announce for the first time with certainty the existence of the Cretaceous formations in Australia. Mr. Gregory doubtfully indicated Cretaceous fossils in his last paper to the Geological Society, but without any generic or specific recognition of fossils of that age; and his materials, when referred to by the officers of the Geological Society, were only quoted as Mesozoic. Mr. Selwyn also alluded formerly to a specimen of an Echinide in flint, given to him as found in gravel in sinking a well at Prahran, near Melbourne, having been identified by me as the European Cretaceous *Conulus albogalerus*; and I had a flint *Ananchytes ovatus* of the same age, given to me as found at Richmond, near Melbourne also; but both of those specimens were unsatisfactory, as far as the proof of their having really belonged to any Australian stratum. I can now, however, recognize the Lower Chalk; and this nearly fills up the great series of marine Mesozoic formations supposed to be absent in Australia when I left Europe, but most of which I have recog-

nized from fossil evidence. The most common of the fossils is a species of *Inoceramus* with coarsely fibrous shell, nearly $\frac{1}{4}$ inch thick, agreeing in size and shape almost exactly with the English *Inoceramus mytiloides* (Sow.), from which it differs in having the hinge-line rather longer, the anterior end more pointed, and the superior posterior angle rather more obtuse. This species I have named, in a paper read recently before the Royal Society of Victoria, *I. Carsoni* (M'Coy), in honour of one of the donors. The second most common fossil is a much larger and broader species of the same genus, which I at the same time named *Inoceramus Sutherlandi* (M'Coy), after the other donor of the specimens, which were so painfully carried, from the remote point indicated to the settled districts, on their saddle. This second species, in form, size, and concentric undulations of the surface, nearly agrees with the French and English common Cretaceous *I. Cuvieri*, but is less curved at the ventral margin near the beak.

The next shell is an Ammonite, in size, number and involution of whorls, shape, markings, and septa, so nearly identical with the very common *A. Beudanti* (Br.) of the French Lower Chalk, that, but for being slightly less compressed, and a slight difference in some of the septal lobes, it could scarcely be separated, even as a variety. I have named it *Ammonites Flindersi* (M'Coy), to call attention to the locality. It may be described as follows:—

Ammonites Flindersi.

Discoid, moderately compressed; periphery narrow, obtusely rounded; whorls $4\frac{1}{2}$, about one-fourth of the width of each exposed in an obtusely angular-edged, flat-sided umbilicus; surface crossed by obtuse sigmoid striæ, some of which are more prominent than the more numerous intervening ones. Diameter 6 inches, proportional thickness $\frac{2\,9}{1\,0\,0}$, width of last whorl $\frac{4\,9}{1\,0\,0}$. Seven much divided lobes in the septa of each side, two of which are within the edge of the umbilicus.

With these shells three vertebræ of a large Teleosteous fish occur.

The matrix of these specimens is an olive calcareo-argillaceous marl.

XXXIX.—*On a new Growing Slide for the Microscope.*

By H. L. Smith, Kenyon College, U.S.*

In studying the growth and conjugation of the Diatomaceæ, I have felt the want of some means of keeping them alive for a long time under the microscope, and have devised for this pur-

* From Silliman's American Journal of Science, September 1865.